MONSANTO CHEMICAL COMPANY

Anniston, Alabama
Plant Laboratory

STANDARD ANALYTICAL METHOD

Method No. 053

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Product	AROCLORS AND PYRANOLS	5/29/61	1 OF 3
Test	POUR POINT	WRITTEN BY: W.W.K.	APPROVED BY: W.W.K.

This Method ☐ Supersedes ☒ Revises Instructions Issued On 6/14/57

SCOPE

This procedure describes the method for determining the pour point of Aroclors and Pyranols following a modified ASTM D-97 procedure.

EQUIPMENT

1. Single or four place Cloud and Pour Test apparatus, ASTM D-97.
2. Test cylinders, pyrex, for above.
3. Thermometer - ASTM No. E-1(5c) Cloud and Pour Test, Range -38°c to +50°c and ASTM No. E-1(6c) Cloud and Pour Test, Low, Range -80°c to +20°c.

Reagents

1. Methanol or Acetone.
2. Dry ice.

SAFETY

Aroclors and Pyranols are irritating to the skin. The vapors of hot materials are irritating to the eyes and upper respiratory system. If accidental contact is made with the eyes, flush immediately with large quantities of water for at least 15 minutes and get immediate medical attention. The higher Aroclors must be hot to pour, so be careful of thermal burns.

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DETERMINATION

1. Select the proper thermometer and cooling bath medium from below:

Material	Thermometer	Bath	Approximate Pour Point
Aroclor 1262	-38 to +50°c	Water	+38°c
Aroclor 1260	-38 to +50°c	Ice-Water	+30°c
Aroclor 1254	-38 to +50°c	Ice-Salt	+10°c
Aroclor 1242	-38 to +50°c	Dry Ice-Alc.	-18°c
Aroclor 1232	-80 to +20°c	Dry Ice-Alc.	lower than -30°c
Inertsen PPO	-80 to +20°c	Dry Ice-Alc.	lower than -32°c
Pyranol 1470	-80 to +20°c	Dry Ice-Acetone	lower than -44°c

2. Shake the sample well to mix. On the higher Aroclors it will be necessary to heat the sample to make it fluid enough to mix.

3. Add 2 - 2 1/4 inches of sample to the test cylinder. These depths must be closely adhered to.

4. Insert the proper thermometer thru a cork or rubber stopper. The thermometer must be in the center of the stopper.

5. Place the thermometer in the test cylinder so that the beginning of the capillary is 1/8 inch below the surface of the sample. Be sure the thermometer is in a vertical position.

6. If the sample had to be heated to pour allow it to cool to abt. 12°c above expected pour point before placing in bath. For samples pouring well below room temperature place in bath directly.

7. Adjust the bath to 10° - 15°c below expected pour point.

8. Place test cylinder and sample in bath holder.

9. When the temperature of the sample is about 10°c above expected pour point remove the cylinder and tilt it just enough to ascertain whether there is a movement of sample in the jar.

10. If no movement is noted replace cylinder in holder. The entire operation in Steps 9 and 10 should take only three seconds.

11. Repeat Steps 9 and 10 every 2°c until no movement of sample is noted. When this point is noted hold the sample in a horizontal position for five seconds, by stop watch.

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12. If there is any movement noted in the five second interval place sample back in bath and cool another 2°c before repeating Steps 9 thru 11.

13. The pour point has been reached when no movement is noted for five seconds.

14. Report the pour point as temperature noted plus 3°c. Addition must be algebraic.

Examples

1. Observed reading 26°c
   Pour point = 26 + 3 = 29°c

2. Observed reading -20°c
   Pour point = -20 + 3 = -17°c

DISCUSSION

The pour point of an oil is the lowest temperature at which it will pour or flow when it is chilled without disturbance under definite prescribed conditions.

REFERENCE

ASTM Method D 97 - 57 ASTM Standards 1958, Part 7, Page 50.

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